REMARKS:

Status

After this response, claims 1 to 8 and 24 to 45 are pending. Claims 24, 34 and 44 have been amended. Claims 1, 26, and 36 are the independent claims. Reconsideration and further examination are respectfully requested.

Claim Rejections

Claims 1 to 3, 5 to 7, 24 to 28, 30 to 32, 34 to 38, 40 to 42, 44 and 45 were rejected under 35 U.S.C. § 102(e) over U.S. Patent No. 6,311,193 (Sekido).1 Claims 4, 8, 29, 33, 39, and 43 were rejected under 35 U.S.C. § 103(a) over Sekido in view of U.S. Patent No. 5,819,292 (Hitz). Applicants respectfully traverse these rejections.

Discussion

<u>Claims 1 to 8, 24 and 25</u>: Claim 1 as amended is reproduced below:

> 1. A method of capturing the contents of files and directories in a file system, said file system comprising a set of storage blocks for plural files in a mass storage system including steps of
> recording an active map in said file system of said storage blocks used by said plural files in said active file system;

---

1 Applicants note that the first sentence of paragraph 5 of the Office Action stated that "Claim 1-23, 25-31, 34-48 are rejected under 35 U.S.C. 102(e) as being anticipated by Sekido et al. (US Patent No. 6,311,193 B1)." However, this range of claims included claims that were no longer pending and also claims that were discussed only under the § 103(a) rejection (i.e., claims 4, 8, 29, 39 and 43). Applicants therefore relied upon the subsequent explanations of the § 102(e) rejections to determine which claims were rejected under that section.

recording a consistency point in said file system including a consistent version of said plural files in said file system at a previous time, said consistency point including a copy of said active map at said previous time; and

refraining from writing data to storage blocks in response to said active map and at least one said copy of said active map included in said consistency point.

This claim was rejected under § 102(e) over Sekido. That reference is not seen by Applicants to disclose or to suggest the foregoing features of claim 1, at least with respect to "an active map ... of said storage blocks used by said plural files in said active file system at a previous time" that is included in a consistency point recorded in the file system.

The Office Action cited Figure 20 of Sekido as teaching this feature. Figure 20 does show SS information 10 located on disk device 4. However, this SS (snapshot) information is not an active map as that term is used in claim 1. Rather, snapshot information 10 in Sekido is "a structure that holds the time stamps for each snapshot" (col. 10, lines 66 and 67).

With respect to the claimed feature of "said consistency point including a copy of said active map at said previous time," the Office Action cited the following portions of Sekido: col. 2, line 53, to col. 3, line 29; col. 10, line 59, to col. 11, line 15; and Figure 20.

Col. 2, line 53, to col. 3, line 29, appears in Sekido's Brief Summary of the Invention. The cited text lists steps of a data sheltering method. This method mentions a "local address tag block composed of the logical addresses for the individual logical blocks accumulated in the writing buffer." Col. 5, lines 59 and 60, elaborates on use of "a buffer management table 9 for storing ... information on the logical addresses for the stored writing data." As shown in Figure 4, buffer management table 9 is located in Sekido's disk snapshot section 3, which in turn "is located between

-10-

the file system 2 and the disk device 4" (col. 5, lines 39 and 40). Thus, Applicants respectfully

submit that the "local address tag block" and the "buffer management table" are not stored in the file

system. It necessarily follows that these elements are not equivalent to the claimed active map,

which is included in a consistency point recorded in the file system.

With respect to Figure 20, as mentioned above, snapshot information 10 in Sekido is

"a structure that hold the time stamps for each snapshot" (col. 10, lines 66 and 67), not an "active

map ... of said storage blocks used by said plural files in said active file system at a previous time."

In view of the foregoing, Applicants respectfully submit that Sekido does not teach

claim 1's "active map ... of said storage blocks used by said plural files in said active file system at a

previous time" that is included in a consistency point recorded in the file system. Accordingly,

reconsideration and withdrawal are respectfully requested of the rejection under § 102 of claim 1 and

its dependent claims 2, 3, 5 to 7, 24 and 25.

Claim 4: This claim was rejected under § 103(a) over Sekido in view of Hitz. The

claim depends from claim 1 and adds the limitation that "said file system is a WAFL file system."

Hitz was cited as teaching and most certainly does teach the WAFL file system. However,

Applicants submit that Hitz should not be combined with Sekido to reject claim 4.

Sekido's Background of the Invention discusses the "Episode File System," which

was a precursor to the WAFL file system. Both file systems enable a snapshot to be created by

copying a root inode. Both file system utilize a tree structure. Sekido at col. 2, lines 13 to 26,

discusses both of these features (i.e., copying an inode and a tree structure) in its Background of the

Invention. Sekido goes on to state that "[i]n the aforementioned approach, it is necessary to develop

a new dedicated file system, which cannot be applied as it is to existing computer systems" (col. 2, lines 22 to 24). Applicants respectfully submit that WAFL is exactly such a "new dedicated file system." Sekido further states that "the techniques used in the [Episode] file system are not applicable to an extent-based file system, such as Microsoft NTFS" (col. 2, lines 26 to 28). An explicit objective of Sekido is "to provide a computer system which is applicable as it is to an existing computer system or file system and enables a very flexible data sheltering that allows the update of snapshots" (col. 2, lines 40 to 43).

In this context, Applicants submit that applying Sekido to an Episode or WAFL file system would not be obvious to one skilled in the art. Those systems operate in a different manner (i.e., using root inodes and a tree structure) than an "existing computer or file system" such as NTFS. Those systems also already include snapshot functionality. Thus, addition of Sekido's system to a WAFL system such as Hitz's system appears on its face to be redundant and therefore not obvious. For at least this reason, Applicants respectfully request withdrawal of the § 103 rejection of claim 4.

Claim 24: This claim was rejected under § 102 over Sekido. The claim depends from claim 1 and includes the further step of "generating a summary map by performing a logical OR operation with at least one said copy of said active map included in said consistency point." Before this response, the claim did not explicitly cite a logical OR operation.

The portion of Sekido cited against claim 24, namely Fig. 31, and the accompanying text does not mention a logical OR operation for determining a summary map. Instead, in Sekido, "two stripes are read into a memory and only the valid blocks are transferred to the writing buffer" (col. 17, lines 52 to 54). "In parallel with this, a logical address tag TG10 is formed by moving only

the logical addresses for the valid blocks in TG1 and TG3 to the corresponding positions and the time stamp at that time is updated." (col. 17, lines 54 to 57). These steps are different from performing a logical OR operation to generate a summary map, as recited by claim 24. Accordingly, reconsideration and withdrawal are also respectfully requested of the § 102 rejection of claim 24 for this additional reason.

Conclusion: For at least the foregoing reasons, reconsideration and withdrawal are respectfully requested of the rejections of claim 1 and its dependent claims. Allowance of those claims also is respectfully requested.

Claims 26 to 45: Claims 26 to 35 recite file systems that substantially implement the methods of claims 1 to 8, 24 and 25. Claims 36 to 45 recite memories that store instructions to implement those methods. Accordingly, withdrawal of the rejection and allowance of those claims are respectfully requested at least for the reasons set forth above.

No Admission

Applicant's decision not to argue each of the independent claims separately is not an admission that the subject matter of those claims is taught by the applied art.

Closing

In view of the foregoing amendments and remarks, the entire application is believed to be in condition for allowance, and such action is respectfully requested at the Examiner's earliest convenience.

-13-

Applicants' undersigned attorney can be reached at (614) 486-3585. All correspondence should continue to be directed to the address indicated below.

Respectfully submitted,

Dane C. Butzer
Reg. No. 43,521

Dated: April 23, 2005

Swernofsky Law Group PC
P.O. Box 390013
Mountain View, CA 94039-0013
(650) 947-0700